



TABLE OF CONTENTS

| | |
|---|------|
| CHAPTER 1 – GOALS AND OBJECTIVES | 1-1 |
| 1.1 INTRODUCTION AND PROJECT OVERVIEW..... | 1-1 |
| 1.2 GENERAL GUIDELINES | 1-2 |
| 1.3 PRIOR PLANNING DOCUMENTATION..... | 1-2 |
| 1.4 KEY ISSUES | 1-3 |
| 1.5 GOALS AND OBJECTIVES | 1-4 |
| 1.6 REGULATORY GUIDELINES | 1-5 |
| <i>1.6.1 Water Quality.....</i> | 1-5 |
| <i>1.6.2 Historical, Architectural, Archaeological, and Cultural Resources.....</i> | 1-6 |
| <i>1.6.3 Biotic Communities.....</i> | 1-6 |
| <i>1.6.4 Endangered and Threatened Species.....</i> | 1-6 |
| <i>1.6.5 Wetlands.....</i> | 1-7 |
| <i>1.6.6 Floodplains.....</i> | 1-8 |
| <i>1.6.7 Coastal Zone Management Program.....</i> | 1-8 |
| <i>1.6.8 Farmland.....</i> | 1-8 |
| 1.7 MASTER PLAN PROCESS..... | 1-9 |
| 1.8 KEY PARTICIPANTS AND PUBLIC INVOLVEMENT | 1-10 |
| <i>1.8.1 Technical Advisory Committee.....</i> | 1-10 |
| <i>1.8.2 St. Lucie County Staff.....</i> | 1-12 |
| <i>1.8.3 St. Lucie County Planning and Zoning Department.....</i> | 1-12 |
| <i>1.8.4 Public Involvement Process</i> | 1-12 |
| 1.9 SUMMARY..... | 1-12 |
| CHAPTER 2 – INVENTORY OF EXISTING CONDITIONS..... | 2-1 |
| 2.1 AIRPORT CHARACTERISTICS..... | 2-2 |
| <i>2.1.1 Overview</i> | 2-2 |
| <i>2.1.2 Location</i> | 2-3 |
| <i>2.1.3 Airport Property.....</i> | 2-6 |
| <i>2.1.4 Background/History of Airport</i> | 2-7 |
| <i>2.1.5 Airport's Aeronautical Role.....</i> | 2-9 |
| 2.2 ECONOMIC BENEFIT TO THE COMMUNITY..... | 2-15 |
| 2.3 INVENTORY OF EXISTING CONDITIONS..... | 2-16 |
| <i>2.3.1 Airspace/Air Traffic Management.....</i> | 2-16 |
| <i>2.3.2 Noise Abatement Procedures.....</i> | 2-19 |
| <i>2.3.3 Weather Conditions.....</i> | 2-20 |
| 2.4 AIRFIELD | 2-26 |
| <i>2.4.1 Runways</i> | 2-26 |
| <i>2.4.2 TAXIWAYS.....</i> | 2-30 |
| <i>2.4.3 Aprons, Tie-Downs and Helipads.....</i> | 2-32 |



| | |
|--|-------------|
| <i>2.4.4 Visual Approach Aids.....</i> | 2-34 |
| <i>2.4.4 Signage.....</i> | 2-35 |
| <i>2.4.6 Weather Reporting Facilities.....</i> | 2-36 |
| <i>2.4.7 Navigational Aids (NAVAIDS).....</i> | 2-36 |
| <i>2.4.8 Runway Protection Zones (RPZs).....</i> | 2-45 |
| 2.5 LANDSIDE FACILITIES | 2-45 |
| <i> 2.5.1 Aircraft Facilities.....</i> | 2-45 |
| <i> 2.5.2 Fixed Based Operators.....</i> | 2-50 |
| 2.6 SUPPORT FACILITIES..... | 2-51 |
| <i> 2.6.1 Air Traffic Control Tower (ATCT).....</i> | 2-52 |
| <i> 2.6.2 Airport Administration & Maintenance</i> | 2-52 |
| <i> 2.6.3 Aircraft Rescue and Firefighting (ARFF).....</i> | 2-52 |
| <i> 2.6.4 Fuel Farms</i> | 2-53 |
| <i> 2.6.5 United States Customs.....</i> | 2-54 |
| <i> 2.6.6 Electrical Vault and Utilities.....</i> | 2-54 |
| <i> 2.6.7 Security.....</i> | 2-55 |
| 2.7 EXISTING NATURAL FEATURES INVENTORY..... | 2-57 |
| <i> 2.7.1 Cultural.....</i> | 2-58 |
| <i> 2.7.2 Terrestrial Concerns.....</i> | 2-58 |
| <i> 2.7.3 Aquatic Concerns.....</i> | 2-60 |
| 2.8 SUMMARY..... | 2-64 |
| CHAPTER 3 – FORECASTS OF AVIATION ACTIVITY..... | 3-1 |
| 3.1 NEEDS AND BENEFITS | 3-2 |
| 3.2 FORECASTING LIMITATIONS | 3-2 |
| 3.3 EXISTING AND FORECAST SOCIOECONOMIC CHARACTERISTICS | 3-3 |
| <i> 3.3.1 Local Area Characteristics/Service Area</i> | 3-3 |
| <i> 3.3.2 Population.....</i> | 3-3 |
| <i> 3.3.3 Employment</i> | 3-4 |
| <i> 3.3.4 Income and Earnings.....</i> | 3-9 |
| 3.4 HISTORIC AND CURRENT ACTIVITY..... | 3-11 |
| <i> 3.4.1 Historic and Current Operations.....</i> | 3-11 |
| <i> 3.4.2 Historic and Current Based Aircraft.....</i> | 3-13 |
| 3.5 FACTORS AND OPPORTUNITIES AFFECTING ACTIVITY LEVELS | 3-14 |
| <i> 3.5.1 Natural Disasters.....</i> | 3-14 |
| <i> 3.5.2 Terrorism/Security</i> | 3-15 |
| <i> 3.5.3 Economic Conditions.....</i> | 3-15 |
| <i> 3.5.4 Aircraft Trends.....</i> | 3-16 |
| <i> 3.5.5 Airspace Modernization/NextGen.....</i> | 3-17 |
| <i> 3.5.6 Potential for Commercial Airline Service.....</i> | 3-17 |
| 3.6 REGRESSION ANALYSES AND SOCIOECONOMIC CORRELATION..... | 3-18 |
| 3.7 PREVIOUS FORECASTING EFFORTS..... | 3-24 |
| <i> 3.7.1 2008 FAA Terminal Area Forecast.....</i> | 3-24 |
| <i> 3.7.2 2002 Airport Master Plan Update.....</i> | 3-27 |



| | |
|---|------|
| 3.7.3 2005 FAR Part 150 Noise Study Update..... | 3-28 |
| 3.7.4 2004 Florida Aviation System Plan | 3-28 |
| 3.7.5 FAA Aerospace Forecasts (2008-2025)..... | 3-29 |
| 3.8 APPLIED FORECASTS..... | 3-30 |
| 3.8.1 Forecast Operations..... | 3-31 |
| 3.8.2 Forecast Based Aircraft | 3-41 |
| 3.9 PEAK HOUR FORECASTS | 3-52 |
| 3.10 SUMMARY..... | 3-54 |

APPENDICES

| | |
|--|-----|
| APPENDIX A – GLOSSARY OF TERMS..... | A-1 |
| APPENDIX B – KEY MEMBERS AND PUBLIC PARTICIPATION..... | B-1 |
| APPENDIX C – NATURAL FEATURES INVENTORY..... | C-1 |

LIST OF TABLES

| | |
|---|------|
| TABLE 2-1 FAA NPIAS SERVICE LEVELS | 2-10 |
| TABLE 2-2 TREASURE COAST REGION PUBLIC AIRPORTS..... | 2-12 |
| TABLE 2-3 FDOT FIVE-YEAR WORK PROGRAM – FPR PROGRAM | 2-14 |
| TABLE 2-4 HISTORIC RUNWAY WIND COVERAGE | 2-26 |
| TABLE 2-5 EXISTING AIRFIELD FACILITIES | 2-31 |
| TABLE 2-6 2008 APRON FACILITIES..... | 2-32 |
| TABLE 2-7 RUNWAY PROTECTION ZONE DIMENSIONS | 2-45 |
| TABLE 2-8 EXISTING AIRPORT TENANTS AND STRUCTURES..... | 2-47 |
| TABLE 2-9 FUEL FLOWAGE | 2-54 |
| TABLE 2-10 FPR UTILITY PROVIDERS..... | 2-55 |
| | |
| TABLE 3-1 TOTAL POPULATION | 3-5 |
| TABLE 3-2 TOTAL EMPLOYMENT..... | 3-6 |
| TABLE 3-3 ST. LUCIE COUNTY EMPLOYMENT RANKINGS..... | 3-7 |
| TABLE 3-4 TRANSPORTATION EMPLOYMENT | 3-8 |
| TABLE 3-5 TOTAL PER CAPITA PERSONAL INCOME..... | 3-10 |
| TABLE 3-6 HISTORIC OPERATIONS | 3-13 |
| TABLE 3-7 HISTORIC BASED AIRCRAFT | 3-14 |
| TABLE 3-8 REGRESSION ANALYSES – SOCIOECONOMIC CHARACTERISTICS | 3-20 |
| TABLE 3-9 FAA TAF OPERATIONS FORECAST..... | 3-25 |
| TABLE 3-10 FAA TAF BASED AIRCRAFT FORECAST..... | 3-26 |
| TABLE 3-11 2002 MASTER PLAN UPDATE FORECASTS | 3-27 |
| TABLE 3-12 2002 FAR PART 150 NOISE STUDY UPDATE FORECASTS | 3-28 |



| | | |
|------------|--|------|
| TABLE 3-13 | FASP FORECASTS | 3-29 |
| TABLE 3-14 | FAA AEROSPACE HOURS FLOWN FORECAST | 3-30 |
| TABLE 3-15 | FAA AEROSPACE ACTIVE FLEET FORECAST | 3-30 |
| TABLE 3-16 | SUMMARY OF OPERATIONS FORECASTING METHODS | 3-33 |
| TABLE 3-17 | LOW, MEDIUM, AND HIGH OPERATIONS FORECASTS | 3-35 |
| TABLE 3-18 | OPERATIONS FORECASTS COMPARISON TO TAF | 3-38 |
| TABLE 3-19 | INSTRUMENT OPERATIONS FORECAST | 3-39 |
| TABLE 3-20 | LOCAL/ITINERANT OPERATIONS FORECAST | 3-40 |
| TABLE 3-21 | OPERATIONS BY FLIGHT TYPE | 3-41 |
| TABLE 3-22 | SUMMARY OF BASED AIRCRAFT OPERATIONS FORECASTING METHODS | 3-43 |
| TABLE 3-23 | LOW, MEDIUM, AND HIGH BASED AIRCRAFT FORECASTS | 3-45 |
| TABLE 3-24 | BASED AIRCRAFT FORECASTS COMPARISON TO TAF | 3-47 |
| TABLE 3-25 | BASED AIRCRAFT FLEET MIX FORECAST | 3-50 |
| TABLE 3-26 | OPERATIONS FLEET MIX FORECAST | 3-51 |
| TABLE 3-27 | PEAK ACTIVITY MONTHS | 3-53 |
| TABLE 3-28 | PEAK HOUR OPERATIONS BREAKDOWN | 3-54 |
| TABLE 3-29 | SUMMARY OF FPR FORECASTS | 3-55 |

LIST OF FIGURES

| | | |
|-------------|--|------|
| FIGURE 1-1 | STEPS IN THE MASTER PLAN PROCESS..... | 1-11 |
| FIGURE 2-1 | LOCATION MAP | 2-4 |
| FIGURE 2-2 | SURFACE TRANSPORTATION MAP | 2-5 |
| FIGURE 2-3 | FOREIGN TRADE ZONE SITES | 2-6 |
| FIGURE 2-4 | HISTORY WALL DEDICATION | 2-7 |
| FIGURE 2-5 | TREASURE COAST REGION PUBLIC AIRPORTS..... | 2-11 |
| FIGURE 2-6 | FAA AIRSPACE CLASSIFICATIONS | 2-17 |
| FIGURE 2-7 | SURROUNDING AIRSPACE MAP | 2-18 |
| FIGURE 2-8 | FPR VOLUNTARY NOISE ABATEMENT PROCEDURES..... | 2-21 |
| FIGURE 2-9 | HISTORIC ALL WEATHER WIND ROSE | 2-23 |
| FIGURE 2-10 | HISTORIC IFR WIND ROSE | 2-24 |
| FIGURE 2-11 | HISTORIC VFR WIND ROSE | 2-25 |
| FIGURE 2-12 | EXISTING AIRFIELD | 2-27 |
| FIGURE 2-13 | EXISTING APRONS | 2-33 |
| FIGURE 2-14 | PRECISION ILS APPROACH – RUNWAY 9 (Future 10R) | 2-39 |
| FIGURE 2-15 | NON-PRECISION RNAV (GPS) APPROACH – RUNWAY 9 (Future 10R) | 2-40 |
| FIGURE 2-16 | NON-PRECISION RNAV (GPS) APPROACH – RUNWAY 27 (Future 28L) | 2-41 |
| FIGURE 2-17 | NON-PRECISION RNAV (GPS) APPROACH – RUNWAY 14 | 2-42 |
| FIGURE 2-18 | NON-PRECISION VOR/DME APPROACH – RUNWAY 14 | 2-43 |
| FIGURE 2-19 | NON-PRECISION NDB APPROACH – RUNWAY 27 (Future 28L) | 2-44 |



| | | |
|-------------|--|------|
| FIGURE 2-20 | ST. LUCIE COUNTY UTILITY HYDROLOGY PLACEMENT MAP..... | 2-56 |
| FIGURE 2-21 | ST. LUCIE COUNTY AIRPORT FLORIDA POWER UTILITY MAP | 2-57 |
| FIGURE 2-22 | POTENTIAL WETLANDS..... | 2-62 |
| FIGURE 2-23 | FEMA 100-YEAR FLOODPLAINS..... | 2-63 |
| FIGURE 3-1 | UNEMPLOYMENT RATE, SEASONALLY ADJUSTED..... | 3-16 |
| FIGURE 3-2 | REGRESSION – TRANS. EMPLOYMENT TO OPERATIONS | 3-22 |
| FIGURE 3-3 | REGRESSION – EMPLOYMENT TO BASED AIRCRAFT | 3-23 |
| FIGURE 3-4 | SUMMARY OF OPERATIONS FORECASTING METHODS | 3-34 |
| FIGURE 3-5 | LOW, MEDIUM, AND HIGH OPERATIONS FORECASTS | 3-36 |
| FIGURE 3-6 | SUMMARY OF BASED AIRCRAFT FORECASTING METHODS | 3-44 |
| FIGURE 3-7 | LOW, MEDIUM, AND HIGH BASED AIRCRAFT FORECASTS | 3-46 |